

***Tanytarsus usambarae*, spec. nov.**  
**from West Usambara Mts., Tanzania, East Africa**

(Insecta, Diptera, Chironomidae)

**Elisabeth Stur & Torbjørn Ekrem**

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*Tanytarsus usambarae*, spec. nov. from West Usambara Mts. is described and figured as male imago. In the Usambaras, the species co-exists with the closely related *Tanytarsus luctuosus* Freeman. Both have a peculiarly shaped median volsella which separates them from all other African *Tanytarsus* species. *T. usambarae* does not fit well into Palaearctic species group concepts. The genus diagnosis of *Tanytarsus* is emended to include species with a scutal tubercle. *Tanytarsus saetosus* Lehmann is transferred to the genus *Neostempellina* Reiss.

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### Introduction

*Tanytarsus* v. d. Wulp, 1874, is well represented in the Afrotropical region. 24 species are listed in the Catalogue of the Diptera of the Afrotropical region (Freeman & Cranston 1980), five more were described by Lehmann (1979, 1981), an additional six by Ekrem (1999b), while Ekrem & Harrison (1999) added one more from East Africa. On the other hand, Ekrem (1999a) transferred *Tanytarsus bukavus* Lehmann, 1979, and *Tanytarsus congolensis* Lehmann, 1979, to *Cladotanytarsus* Kieffer, and Ekrem & Reiss (1999) transferred *Tanytarsus abnormis* Lehmann, 1981, to the genus *Neostempellina* Reiss. Examination of the type material of *Tanytarsus saetosus* Lehmann, 1981, deposited in the Zoologische Staatssammlung München (ZSM), revealed that this species also belongs to the genus *Neostempellina*. Thus, excluding *Neostempellina saetosa*, comb. nov. and including *T. usambarae*, spec. nov., a total of 33 *Tanytarsus* species are so far known from the Afrotropical region.

### Material, methods and morphology

The terminology follows Sæther (1980) with the additions and corrections given by Sæther (1990). The term “shoulders” is used for the posteromarginal lobes of the male anal tergite. The mounting procedure is according to Sæther (1969). Measurements are taken according to Schlee (1966) with the additions given by Ekrem (1999b), and presented as ranges followed by the mean.

During the work of reviewing Afrotropical *Tanytarsus*, the junior author examined the type material of *Tanytarsus luctuosus* Freeman, deposited at the Natural History Museum (London). Neither Freeman (1958) nor Lehmann (1979) described *T. luctuosus* to have a scutal tubercle, but examination of the types and of Lehmann’s material from Zaïre (now the Democratic Republic of Congo) revealed

that *T. luctuosus* possesses a well developed scutal tubercle. Since absence of this structure has been regarded as diagnostic for the genus *Tanytarsus* (Cranston et al. 1989) we choose to emend the genus diagnosis to also include species with a scutal tubercle.

*Tanytarsus usambarae*, spec. nov.

Figs 1A-E

**Types.** Holotype: ♂, Tanzania, W. Usambara Mts, Mazumbai, Kaputu stream, 1420 m a.s.l., Malaise trap, 14.XI-3.XII.1990, leg. ZMBN's Tanzania expedition (ZMBN Type No. 352). – Paratypes: 4♂♂, as holotype. All slide-mounted in Canada balsam, deposited at Museum of Zoology, University of Bergen, Bergen, Norway. (ZMBN)

**Etymology.** The species is named after its type locality, the Usambara Mts.

**Diagnostic characters.** The new species differs from other *Tanytarsus* species by the following combination of characters in the adult male: broad, transverse, brown pigmented bands on tergites II, III, VI and VII; tergites I, IV and V pale yellowish; tergites VIII and IX brown; wing hairy, carrying setae on all veins except M, and more than 25 setae in cell m; frontal tubercles minute, only visible as two white dots; hypopygium with 4-6 median setae on anal tergite, anal point with 8-10 spines between well developed anal crests; superior volsella with posterior tubercle, more than 8 dorsal setae and numerous dorsolateral microtrichia, digitus absent; median volsella large with numerous long, slender, simple lamellae reaching beyond apex of inferior volsella.

**Description**

**Male imago** (n = 5 if not otherwise stated).

Total length: 2.7-3.0 mm, 2.9 mm. Wing length 1.55-1.66 mm, 1.59 mm. Total length/wing length 1.7-1.9, 1.8.

**Colouration.** Cleared specimens with light brown head, darker brown antennae and eyes; thorax (Fig. 1E) with dark brown patches anteriorly on scutum, laterally under parapsidal suture, on median anepisternum II, on posterior anepisternum II, on epimeron II, on postnotum, and on preepisternum; anteprepronotum and scutellum light brownish; legs and halteres light brown; abdominal tergites II, III, VI and VII with broad, transverse, dark band; tergites I, IV and V pale yellowish; tergites VIII and IX brown.

**Head.** Antennae normally developed, AR 0.92-1.03, 0.95. Ultimate flagellomere 454-522  $\mu\text{m}$ , 476  $\mu\text{m}$  long. Longest antennal seta about 480  $\mu\text{m}$  long. Distance between eyes about 150  $\mu\text{m}$ . Minute frontal tubercles only visible as two white dots. Temporal bristles 10-11; including 3 inner verticals, 3-4 outer verticals and 3-4 postorbital. Clypeus semicircular, 72-86  $\mu\text{m}$ , 79  $\mu\text{m}$  long with 9-14 setae. Tentorium 104-126  $\mu\text{m}$ , 113  $\mu\text{m}$  long, 29-32  $\mu\text{m}$ , 31  $\mu\text{m}$  wide at sieve plate. Stipes 120-126  $\mu\text{m}$ , 124  $\mu\text{m}$  long, 18-22  $\mu\text{m}$ , 19  $\mu\text{m}$  wide. Cibarial pump 47-48  $\mu\text{m}$  wide. Lengths of palpomeres I-IV (in  $\mu\text{m}$ ): 36, 36-47, 148 (n = 1), 122 (n = 1), fifth palpomere missing.

**Thorax** (Fig. 1E). Scutal tubercle absent. Dorsocentrals 8-11, acrostichals 22-25, prealars 1-2, scutellars 6-8. Halteres with 6-7 setae.

**Wing.** VR 1.16-1.20, 1.18. Sc bare, R with 36-42, 32 setae,  $R_1$  with 28-37, 32;  $R_{4+5}$  with 52-61, 55 setae; M bare;  $M_{1+2}$  with 70-80, 76 setae;  $M_{3+4}$  with 34-40, 38;  $Cu$  with 19-27, 22;  $Cu_1$  with 23-25, 24; PCu with 56-71, 63 and An with 31-38, 35 setae. Cell m with 28-45 setae,  $r_{4+5}$  with more than 200,  $m_{1+2}$  with more than 250 including on false vein,  $m_{3+4}$  with about 150 and cu + an together with 250-290 setae.

**Legs.** Spur on front tibia 32-36  $\mu\text{m}$ , 35  $\mu\text{m}$  long including scale. Spurs of middle tibia 32  $\mu\text{m}$  long including 14-18  $\mu\text{m}$  long comb and 22-29  $\mu\text{m}$  long including 12-18  $\mu\text{m}$  long comb; of hind tibia 36-43  $\mu\text{m}$  long including 18  $\mu\text{m}$  long comb and 32-36  $\mu\text{m}$  long including 18  $\mu\text{m}$  long comb. Length of fore femur 720-763  $\mu\text{m}$ , 743  $\mu\text{m}$ ; fore tibia 317-364  $\mu\text{m}$ , 344  $\mu\text{m}$ ; mid femur 720-760  $\mu\text{m}$ , 737  $\mu\text{m}$ ; mid tibia 590-637  $\mu\text{m}$ , 615  $\mu\text{m}$ ; hind femur 738-810  $\mu\text{m}$ , 774  $\mu\text{m}$  and hind tibia 774-814  $\mu\text{m}$ , 795  $\mu\text{m}$ . All tarsal segments missing.

**Hypopygium** (Figs 1A-D). Tergite IX 95-107  $\mu\text{m}$ , 99  $\mu\text{m}$  long with 4-6 median setae, 16-20 apical setae; apical margin with small lateral shoulders; lateral teeth not visible; microtrichia free area between anal crests. Anal point 45-61  $\mu\text{m}$ , 57  $\mu\text{m}$  long, 14-16  $\mu\text{m}$  wide at base and 8-9  $\mu\text{m}$  wide at apex. Anal point with 8-10 spines between well developed anal crests. Anal tergite bands caudally curved, almost

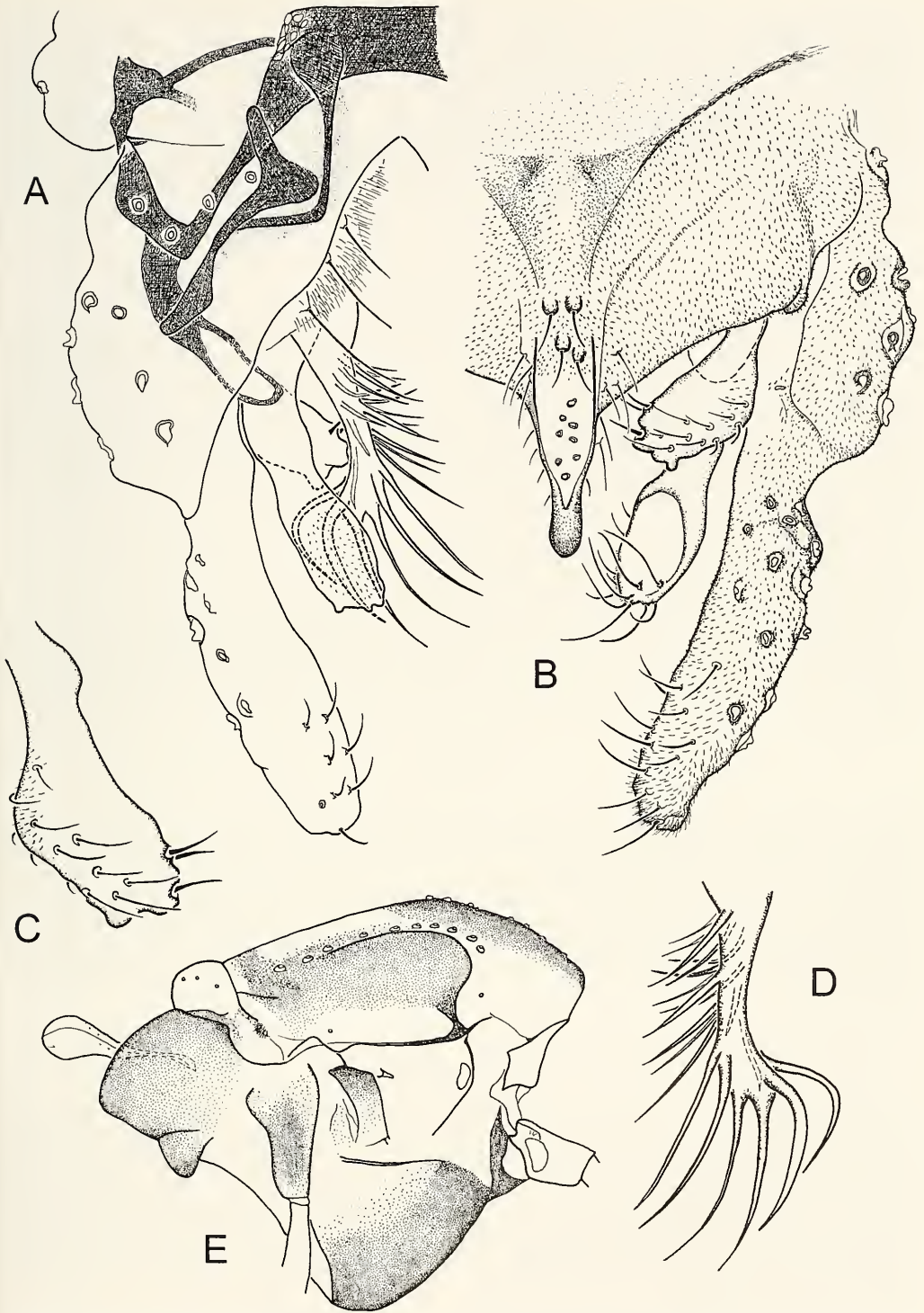


Fig. 1. *Tanytarsus usambarae*, spec. nov. A. Hypopygium ventral view. B. Hypopygium dorsal view. C. Superior volsella. D. Median volsella. E. Thorax.

reaching anal point, with median elongations almost connecting the tergite bands. Transverse sternapodeme 50-75  $\mu\text{m}$ , 59  $\mu\text{m}$  long; phallapodeme forked, 86-109  $\mu\text{m}$ , 96  $\mu\text{m}$  long, anterolateral branch being shorter than anteromedian branch. Gonocoxite 100-143  $\mu\text{m}$ , 118  $\mu\text{m}$  long, gonostylus sausage-shaped, 89-114  $\mu\text{m}$ , 104  $\mu\text{m}$  long. Superior volsella more or less oval with small tubercle on posterior margin (Fig. 1C); bearing 9-12 weak dorsal setae and 3 median setae, the apical 2 stronger than the basal one; dorsolateral microtrichia present; digitus absent. Median volsella (Fig. 1D) 82-95  $\mu\text{m}$ , 88  $\mu\text{m}$  long including about 20, 20-45  $\mu\text{m}$  long, simple lamellae reaching beyond apex of inferior volsella. Inferior volsella, club-shaped, comparatively straight, 70-89  $\mu\text{m}$ , 78  $\mu\text{m}$  long, with strong apical setae. HR 1.02-1.25, 1.13; HV 2.54-2.84, 2.68 ( $n = 3$ ).

### Systematics

African *Tanytarsus* species generally do not conform well to European species group concepts (Ekrem 1999b), and although *T. usambarae*, spec. nov. shares some characteristics with the species of the *T. lugens* and *T. gregarius* groups, it does not fit the group diagnoses. Based on the adult male morphology, *T. usambarae* keys to the *T. lugens* group when the few microtrichia between the anal crests are ignored (Cranston et al. 1989). When regarded as possessing a field of microtrichia between the anal crests, *T. usambarae* keys to the *T. gregarius* species group. However, although the microtrichia do extend to in between the anal crests, they do not constitute a field as seen in *T. gregarius* Kieffer and *T. inaequalis* Goetghebuer. We therefore regard a field of microtrichia not to be present between the anal crests.

The new species differs from the group diagnosis of the *T. lugens* group (Reiss & Fittkau 1971) in having  $AR < 1.4$ , a smooth anal point apex, and a particularly large median volsella with numerous simple lamellae. *T. usambarae*, spec. nov. shares these characters with its probable sister species, *T. luctuosus*, from which it differs only in having a posterior tubercle on the superior volsella, pale yellowish abdominal tergites I, IV and V, and in lacking a scutal tubercle. *T. usambarae* and *T. luctuosus* co-exist in the West Usambara Mts., and both were found in the material collected by the same Malaise trap.

### Habitat

The type locality of *T. usambarae* is situated close to Mazumbai Forest Reserve on Kwagoroto Hill in the West Usambara Mts. Kaputu stream originates at about 1860 m a.s.l. and runs through almost undisturbed rain forest before it empties into a marshy area at about 1400 m (Andersen & Johanson 1992). The type sample was taken at an altitude of about 1420 m. Here the stream varies from 0.5-2 m in width, and is 10-20 cm deep. The current is regarded as moderate (Andersen & Johanson 1992). The bottom substrate is varied with stones, fine sand and mud and contains some plant litter. At the time of collection, the water temperature varied between 14.6 °C and 17.6 °C, and the pH was measured to be 5.9.

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